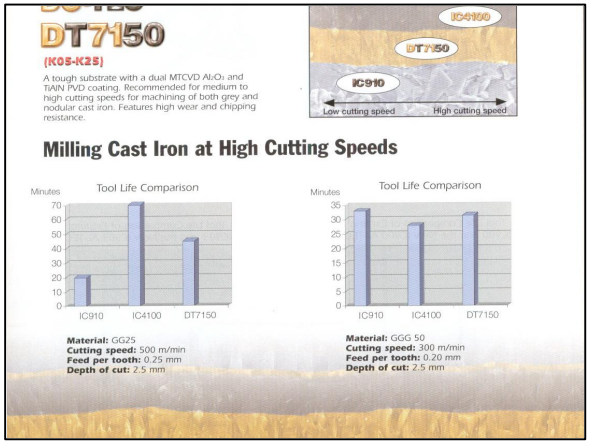
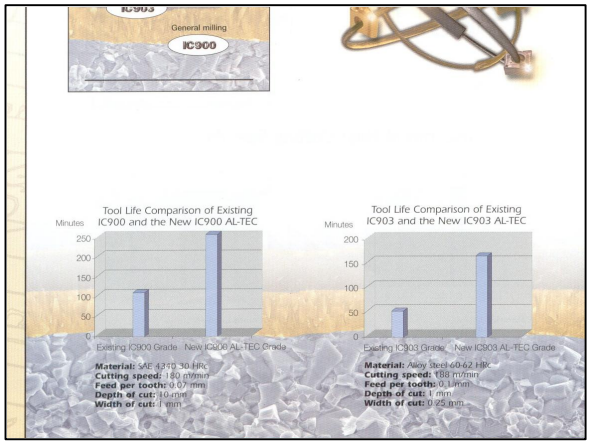
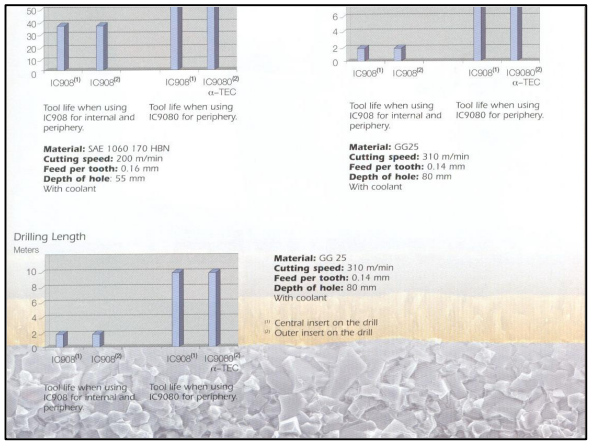
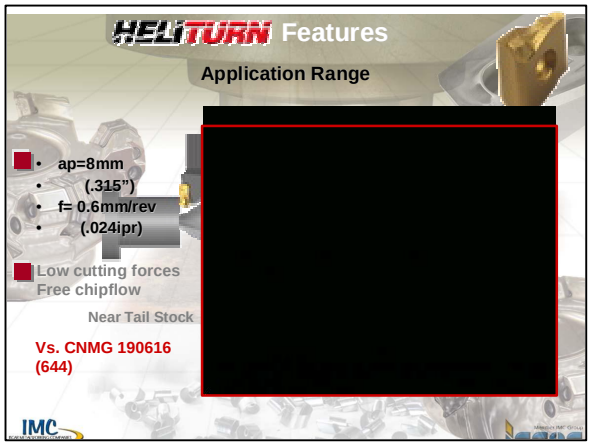
ISCAR GRADE CHART - CVD COATED

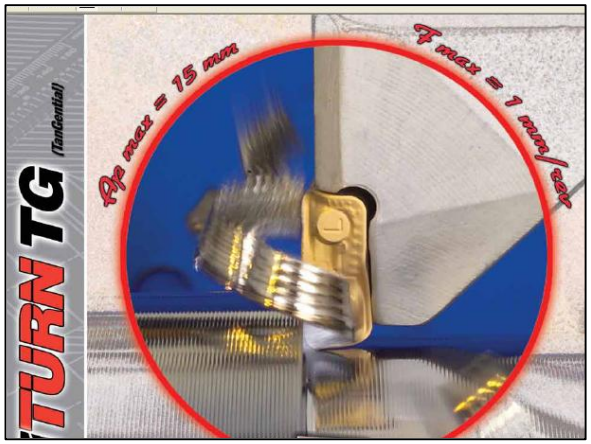
ISCAR GRADE	ISO	COATING LAYERS
IC418 CVD COATED	K10-K25	Al_2O_3 / TiC
IC428 CVD COATED	K05-K20 P05-P15 H15-H25	Al_2O_3 / TiC
IC4028 CVD COATED	K05-K20	TiN / Al_2O_3 / TiCN
IC4050 CVD COATED	K20-K40 P20-P50 M20-M30	TiN / Al_2O_3 / TiCN
IC520M CVD COATED	P15-P35 M10-M20 K10-K30	TiCN
IC635 CVD COATED	P30-P50 M20-M40	TiN / TiC / TiN
IC8048 CVD COATED	P05-P30 K05-K20	Al_2O_3 / TiN / TiC
IC9007 CVD COATED	K10-K20 P10-P20	TiN / Al_2O_3 / TiCN
IC9015 CVD COATED	P10-P30 K10-K25	TiN / Al_2O_3 / TiCN
IC9025 CVD COATED	P20-P30 M15-M30	TiN / Al_2O_3 / TiCN

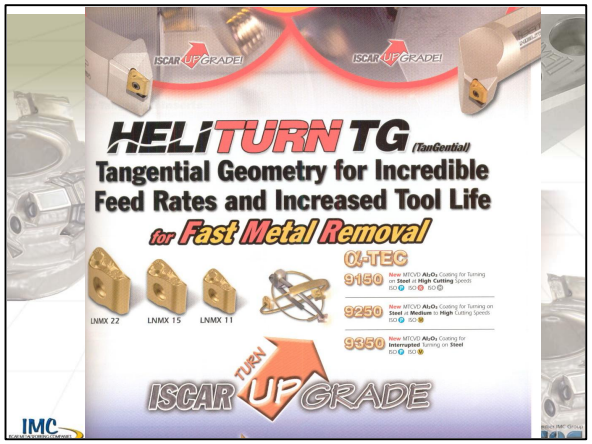


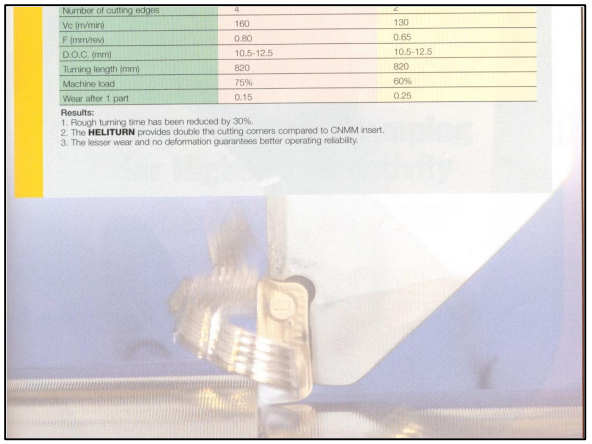


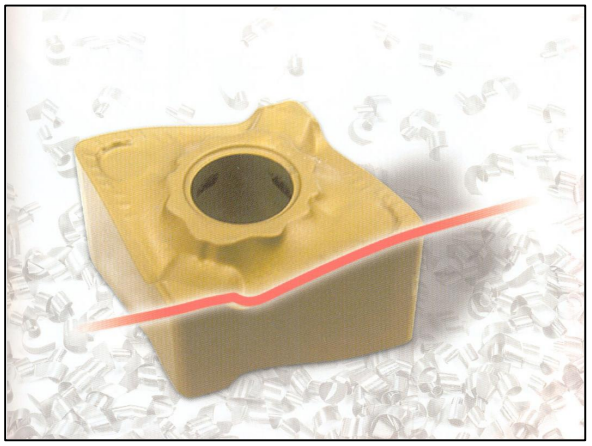


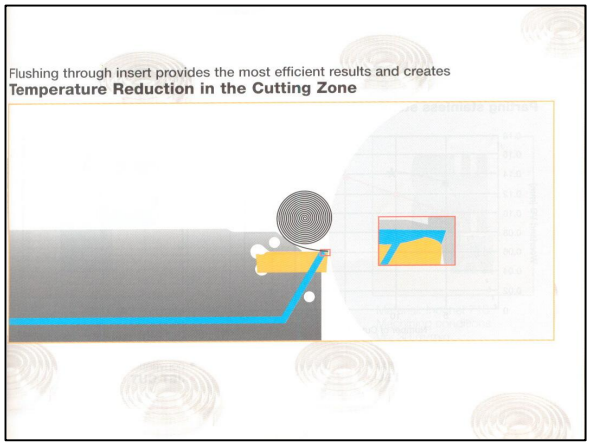


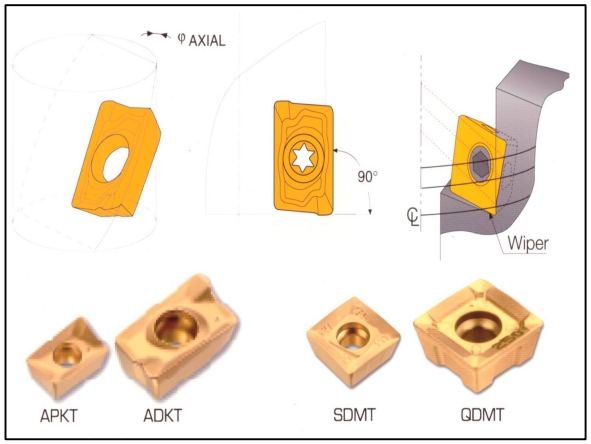


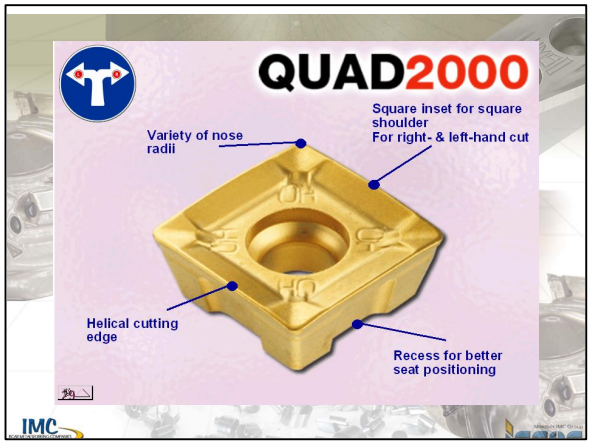










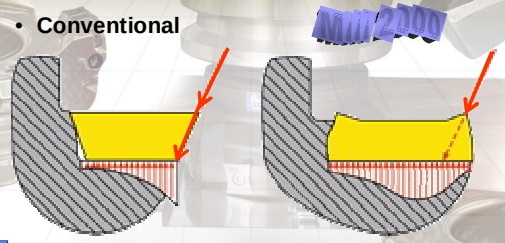


The Millennium Line

- The line that will improve
- productivity with a high
- metal removal rate

Cutting Force Distribution

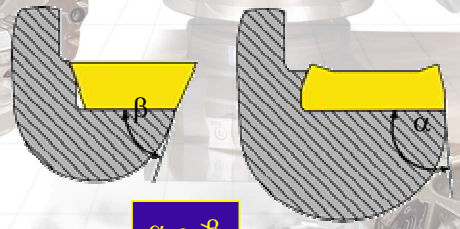
- Conventional



- Cutting force alignment
- Bottom of insert is wider then it's top

Strength of Pocket's Edge

- Conventional
- MILL 2000



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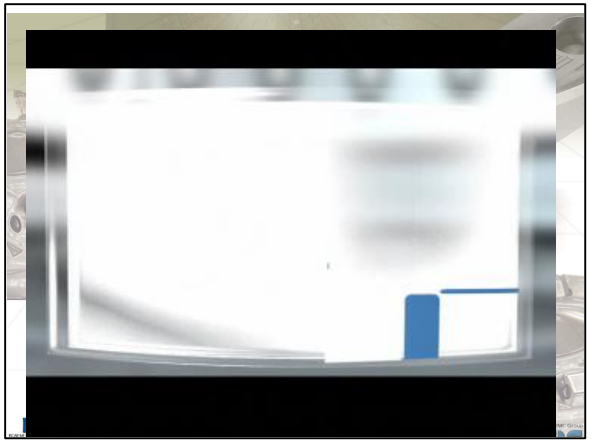
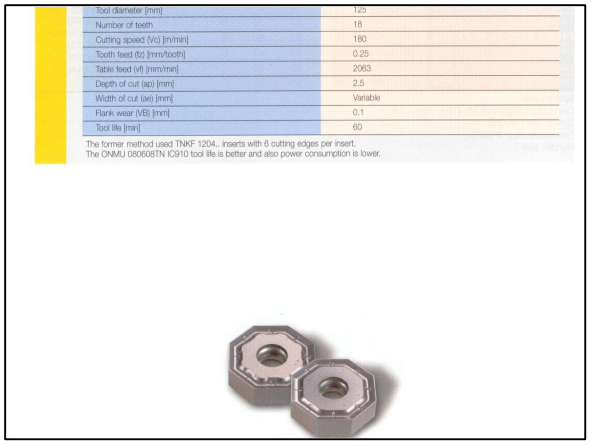




ISCAR UP TANG

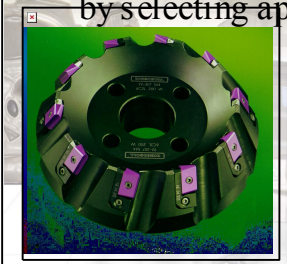
立装刀片 新升代

116年的刀具公司
最早的刀具专利 1889


The Ingersoll Milling Machine Co.,
ROCKFORD, ILLINOIS, U. S. A.
Eastern Branch, 126 Liberty Street, New York City.
MANUFACTURERS OF
HEAVY MILLING MACHINES EXCLUSIVELY.

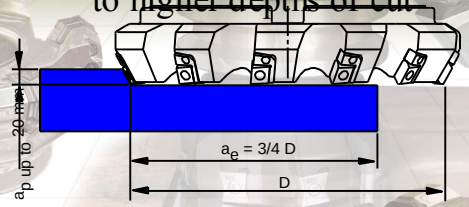
Today's Modern Designs

The cost benefits can immediately be utilised by selecting appropriate tools.



- Tangential insert arrangement increases the productivity of milling applications
- Large carbide section absorbs the cutting force. Higher chip loads possible.
- Larger wear pattern due to bigger carbide sections.

Minimised number of passes due to higher depths of cut



Advantages:
- Lower carbide costs
- Minimised machining time
- Optimised utilisation of machine power

立装刀片 压孔式面铣刀切削用量参考值

材料	硬度 HBS 抗拉强度 (MPa)	切削速度 v_c(m/min) 粗	精	每齿进给量(mm/z) 面铣刀、三面刃铣刀 负前角	正前角	立铣刀
铸铁	<170HBS	60~90	90~120	0.5~1.2	0.3~0.9	0.15~0.4
	170~220HBS	55~80	75~105	0.3~1.0	0.3~0.6	0.1~0.3
	220~300HBS	45~60	60~90	0.2~0.8	0.2~0.6	0.1~0.2
结构钢	400~700MPa	120~240	150~300	0.3~1.0	0.2~0.8	0.15~0.4
	500~800MPa	90~180	120~240	0.3~0.9	0.2~0.8	0.1~0.3
合金钢	800~1100MPa	60~120	60~120	0.3~0.8	0.2~0.6	0.1~0.25
	1100~1400MPa	25~60	30~90	0.2~0.3	—	0.08~0.15
铸钢	400~700MPa	25~90	35~110	0.3~1.0	0.3~0.8	0.1~0.3
黄铜	—	150~600	300~900	—	0.25~0.50	0.25~0.50
青铜	—	90~300	150~300	—	0.25~0.50	0.25~0.50
铝	—	900~4500	>1500	—	0.15~1.0	0.15~1.0
	—	1500~4500	>1500	—	0.15~1.0	0.15~1.0

Our standard is to provide inserts in different coated and uncoated carbide grades. For many tools we hold positive and negative inserts in stock.

Negative

Positive

The cutter bodies are designed to take both geometries.

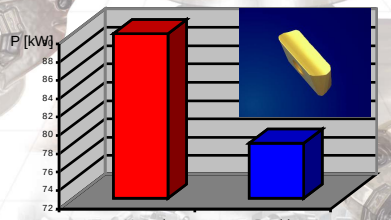
Furthermore the same inserts are used for both face mills and shoulder mills (90°).

This reduces storekeeping considerably.

A practical example for the use of positive inserts:

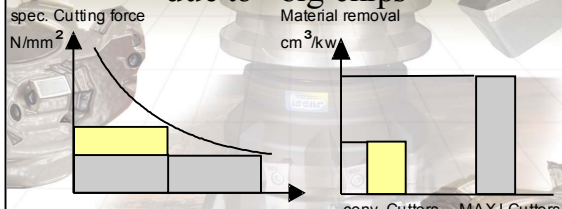
A desired feed per tooth fz of 0.5 mm requires 90 kW.
Using a positive insert enables milling with a machine of 80 kW only.

Power reduction due to positive insert geometry



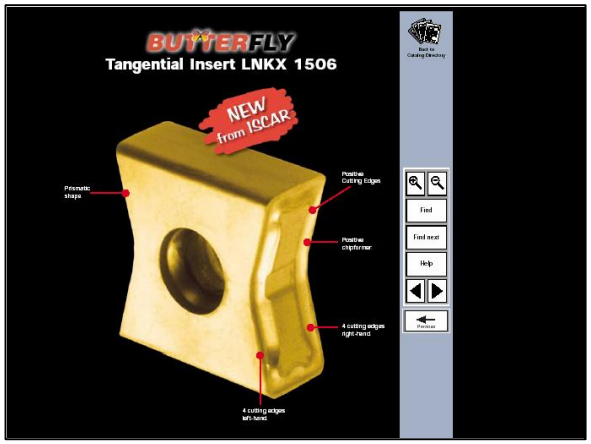
IMC

Best utilisation of machine power due to "big chips

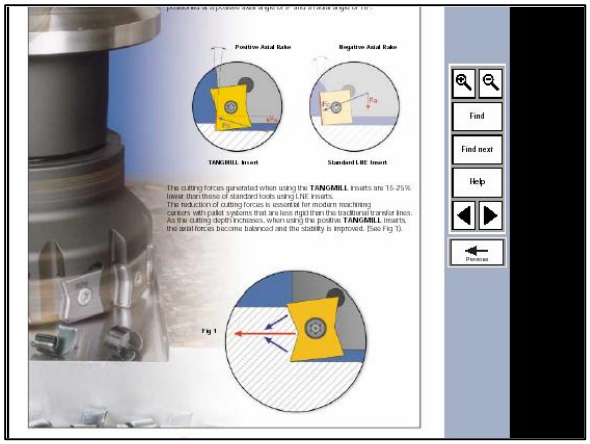


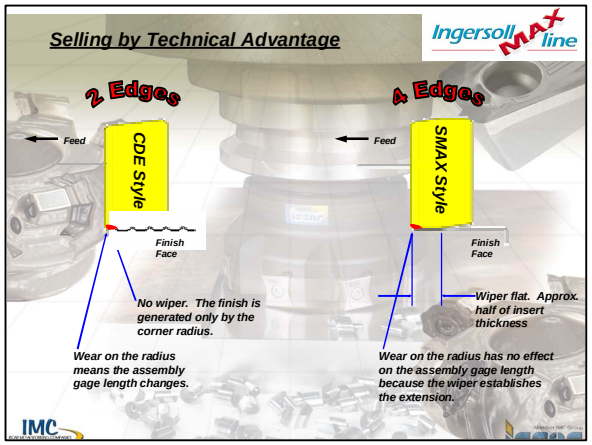
IMC

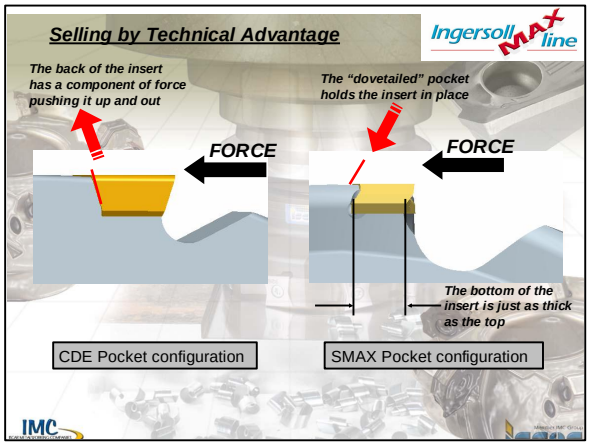
IMC

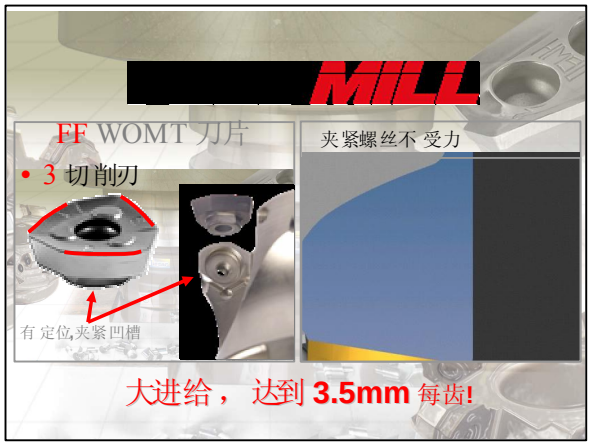


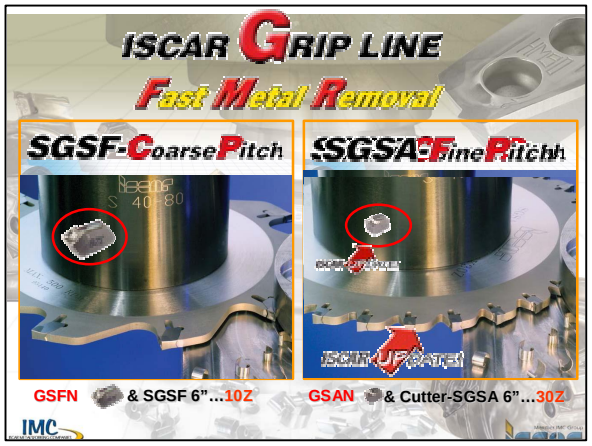
IMC

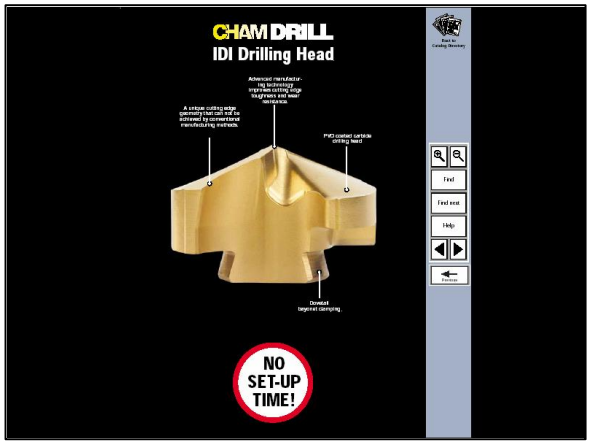


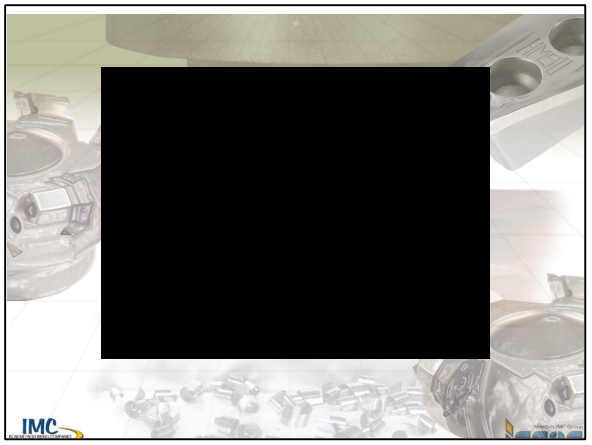


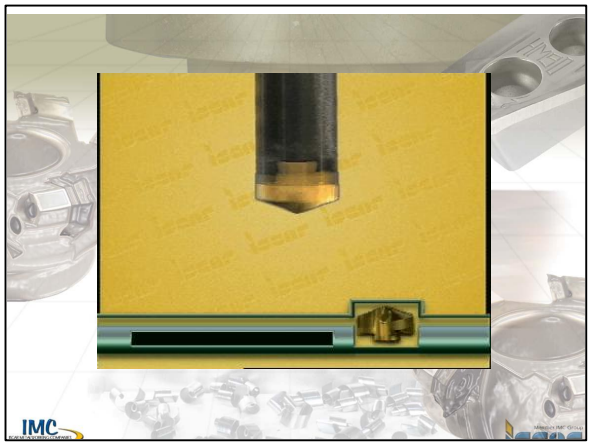


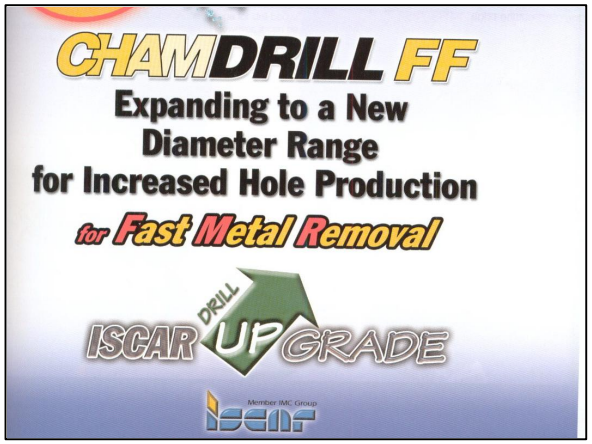


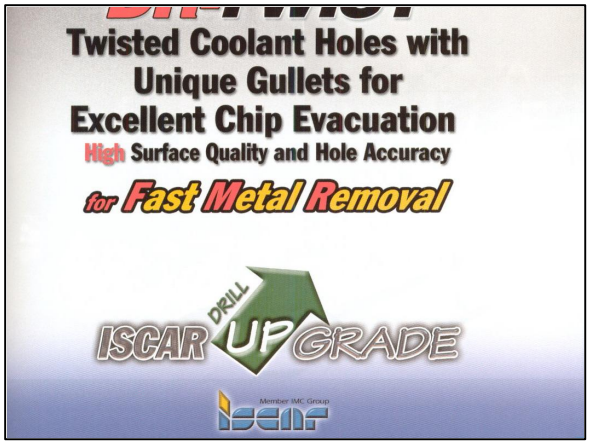


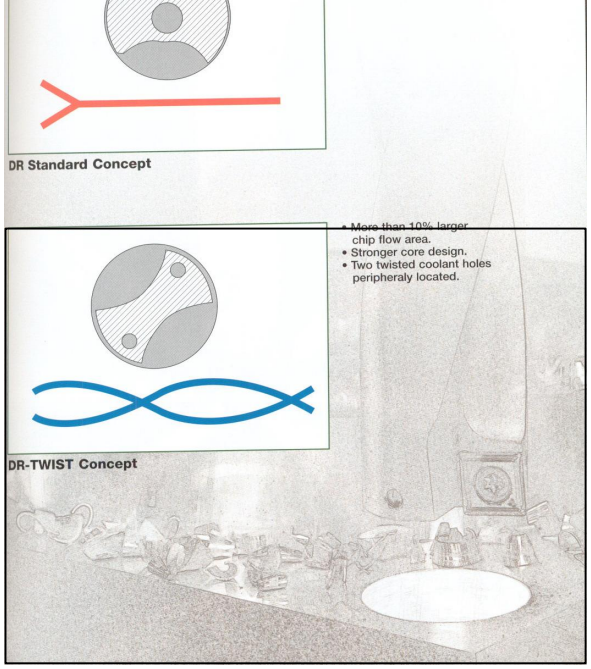


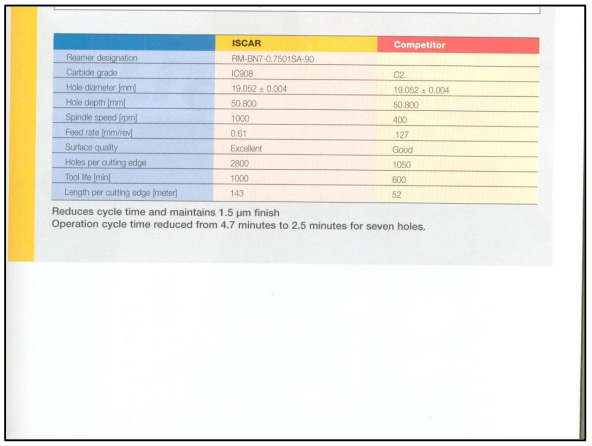












	ISCAR	Competitor
Reamer designation	RM-BN7-0.7501SA-90	
Carbide grade	IC908	C2
Hole diameter [mm]	19.052 ± 0.004	19.052 ± 0.004
Hole depth [mm]	50.800	50.800
Spindle speed [rpm]	1000	400
Feed rate [mm/rev]	0.61	.127
Surface quality	Excellent	Good
Holes per cutting edge	2800	1050
Tool life [min]	1000	600
Length per cutting edge [meter]	143	52

Reduces cycle time and maintains 1.5 µm finish
Operation cycle time reduced from 4.7 minutes to 2.5 minutes for seven holes.